

## **RANDS 2 Technical Documentation**

### **Overview**

The National Center for Health Statistics (NCHS) Division of Research and Methodology (DRM) contracted with Gallup to conduct round 2 of the Research and Development Survey (RANDS), referred to as RANDS 2 in this documentation. RANDS is designed to evaluate estimation approaches for health outcomes from recruited panels and quantitative methodologies for measuring error. RANDS is collected for methodological research purposes and is not designed to produce nationally representative estimates. The objectives of RANDS 2 were to explore measurement error to guide better questionnaire development and to understand how recruited Web-based panels can be integrated alongside traditional modes of data collection. RANDS 2 was conducted from March 29, 2016 to April 13, 2016. This documentation describes the sampling approach, data collection timeline, response rate, and sample weighting for the survey.

### **Sampling**

The target population for this survey consisted of the general population of the United States aged 18 and older. The source of the sample for this survey was the Gallup Panel. The Gallup Panel is a national research panel, a representative group of people recruited to respond to surveys in order to gather information. Since Gallup contacts potential members at random and all U.S. households have an equal and known probability of selection, the Gallup Panel is a probability panel. Currently, the Gallup Panel covers Americans, aged 18 and older, who live in a household with a telephone.

Gallup selects potential members using random-digit-dialing (RDD) of landline telephones and cellphones or address-based sampling (ABS) to contact U.S. households at random. After a person joins the Panel, depending on his/her internet access status, Gallup will contact him/her to complete surveys via either email, mail, or telephone. Gallup conducted RANDS 2 via web, inviting only Panel members with internet access to participate. RANDS 2 does not include individuals who do not have web access (approximately 15% of the Panel).

For RANDS 2, Gallup collaborated with NCHS' DRM on a stratified sample design to obtain a random, representative sample of U.S. adults aged 18 and over (50 states and District of Columbia) from the Gallup Panel. The 36 sampling strata were assigned by Race/Ethnicity (Non-Hispanic White-Only, Non-Hispanic Black-only, Non-Hispanic Other, Hispanic), Age (18-34, 35-54, 55+), and Education (High School or Less, Some College, College Graduates). First, the sampled respondents obtained in the Gallup Panel were stratified according to the NCHS specifications provided above. Then, Gallup performed sampling independently within each stratum using simple random sampling. The sampling ratios varied by stratum to account for differential non-response to improve sample efficiency.

### **Summary of Field Work**

Gallup sent 8,231 randomly selected Panel members email invitations to RANDS 2 on March 29. Panelists who had not yet completed the survey also received email reminders on April 4, April 7, and April 11.

The survey reached the desired 2,000 completes on April 7, but Gallup left it in the field until April 13 to allow time for participants to complete the survey after the third reminder. Gallup invited a total of 8,231 participants to complete the survey, and when it pulled the survey from the field on April 13, a total of 2,480 had responded and completed it, for an overall completion rate of 30.1 percent. An additional 148 respondents started but did not complete the survey.

Table 1 reports the RANDS 2 response rates by week. Table 2 reports the sample sizes and response rates by sample strata.

**Table 1. RANDS 2 Response Rates by Week**

<b>Date</b>	<b>Event</b>	<b>Number of cumulative completes</b>	<b>Response rate (N=8,231)</b>
03/29/2016	1 <sup>st</sup> day of field work	828	10.1%
04/04/2016	1 <sup>st</sup> reminder	1,839	22.3%
04/05/2016	After 7 days of data collection	1,945	23.6%
04/07/2016	2 <sup>nd</sup> reminder	2,199	26.7%
04/11/2016	3 <sup>rd</sup> reminder	2,447	29.7%
04/12/2016	After 14 days of data collection	2,478	30.1%
04/13/2016	End of field period	2,480	30.1%

**Table 2. RANDS 2 Response Rates by Sampling Strata**

<b>Race/Ethnicity</b>	<b>Education Level</b>	<b>Age Group</b>	<b>Total Sample per Stratum</b>	<b>Completes per Stratum</b>	<b>Response Rate</b>
Non-Hispanic White	HS or Less	18-34	692	111	16.04%
Non-Hispanic White	HS or Less	35-54	543	150	27.62%
Non-Hispanic White	HS or Less	55+	398	176	44.22%
Non-Hispanic White	Some College	18-34	1163	272	23.39%
Non-Hispanic White	Some College	35-54	357	130	36.41%
Non-Hispanic White	Some College	55+	224	121	54.02%
Non-Hispanic White	Bachelors +	18-34	318	129	40.57%
Non-Hispanic White	Bachelors +	35-54	351	190	54.13%
Non-Hispanic White	Bachelors +	55+	233	175	75.11%
Non-Hispanic Black	HS or Less	18-34	91	5	5.49%
Non-Hispanic Black	HS or Less	35-54	167	11	6.59%
Non-Hispanic Black	HS or Less	55+	156	27	17.31%
Non-Hispanic Black	Some College	18-34	96	10	10.42%
Non-Hispanic Black	Some College	35-54	319	56	17.55%
Non-Hispanic Black	Some College	55+	358	131	36.59%
Non-Hispanic Black	Bachelors +	18-34	69	13	18.84%
Non-Hispanic Black	Bachelors +	35-54	300	107	35.67%
Non-Hispanic Black	Bachelors +	55+	200	114	57.00%
Non-Hispanic Other	HS or Less	18-34	95	6	6.32%
Non-Hispanic Other	HS or Less	35-54	178	32	17.98%
Non-Hispanic Other	HS or Less	55+	60	12	20.00%
Non-Hispanic Other	Some College	18-34	198	39	19.70%
Non-Hispanic Other	Some College	35-54	60	22	36.67%
Non-Hispanic Other	Some College	55+	60	31	51.67%
Non-Hispanic Other	Bachelors +	18-34	161	49	30.43%
Non-Hispanic Other	Bachelors +	35-54	60	25	41.67%

Non-Hispanic Other	Bachelors +	55+	60	42	70.00%
Hispanic	HS or Less	18-34	193	10	5.18%
Hispanic	HS or Less	35-54	175	26	14.86%
Hispanic	HS or Less	55+	132	28	21.21%
Hispanic	Some College	18-34	140	15	10.71%
Hispanic	Some College	35-54	200	45	22.50%
Hispanic	Some College	55+	100	41	41.00%
Hispanic	Bachelors +	18-34	165	50	30.30%
Hispanic	Bachelors +	35-54	100	42	42.00%
Hispanic	Bachelors +	55+	60	37	61.67%

### Sample Weighting

The final RANDS 2 sample was weighted to account for the sample design and further weighted to U.S. population counts to account for differential non-response and under-coverage of some groups on the sample frame. Sample weights must be used in the analysis of these data in order to produce results with meaningful population representativeness.

Since the Gallup Panel is a probability panel, each Panel member on the sampling frame had an initial weight assigned to each sampled unit (the “Panel weight”). The RANDS survey-specific base sampling weights are derived using a combination of the Panel weight and the probability of selection into RANDS associated with the sampled panel member. This overall survey sampling weight was calculated as the panel base sampling weight multiplied by the inverse probability of selection of a Gallup Panel member in RANDS where the probability of selection of a panelist within a stratum (defined by race/ethnicity, age, and education) was  $n_h/N_h$ , the ratio of the number of panelists sampled ( $n_h$ ) and the total number of panelists available ( $N_h$ ) in that stratum ( $h$ ).

Since not all sampled panel members respond to the survey interview, an adjustment is needed to account for and adjust for survey non-respondents. This adjustment decreases potential nonresponse bias associated with sampled panel members who did not complete the RANDS 2 survey. Gallup created disjoint non-response adjustment cells to generate non-response weights, basing the adjustment cells on region, age group, gender, and education. This non-response adjustment adjusts the sampling weights of records within the non-response adjustment cells of those who completed the survey to account for sampled cases in the same adjustment cell of those who did not complete the survey.

The last stage of adjustments involved post-stratification weighting. In the process of post-stratification weighting, Gallup adjusts the weights by raking, an iterative process in which weights are adjusted until the sample distribution aligns with the reference population, to known demographic characteristics of the U.S. population by age, race/ethnicity, gender, education, and region based on the latest available population projections from the U.S. Census Bureau Current Population Survey (CPS). The post-stratification weighting steps were as follows:

- First, respondents were post-stratified by a total of four regions, two gender groups, and five age groups (18-34, 35-44, 45-54, 55-64, 65+), resulting in 40 post-stratification adjustment cells for region, gender, and age.
- Second, respondents were post-stratified by education (HS or Less, Some College, College Grads) within each of the five age groups.
- Third, respondents were post-stratified by gender within race groups (White Only, Black Only, and Other).
- Finally, Gallup post-stratified respondents by gender within Ethnicity (Hispanic/Non-Hispanic).

These steps were performed iteratively in that order until the raking algorithm converged. At the final stage of weighting, any extreme weights were trimmed to minimize the effect of such weights on the variance of estimates and then weights are re-raked to the same population totals. Once weighting adjustment achieved the goal of matching the CPS population post-stratum totals, the final weights were proportionally adjusted to sum to the total number of RANDS 2 respondents (n=2,480).

**Suggested Citation**

National Center for Health Statistics. RANDS 2 Technical Documentation. Hyattsville, Maryland. 2020.